

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 Claim 1 (original): A color reproduction system  
2 comprising:  
3 tristimulus value calculation means for calculating  
4 tristimulus values under observation illumination light  
5 corresponding to a spectral reflectance of an object,  
6 said tristimulus value calculation means calculating the  
7 tristimulus values using spectral reflectance data of a  
8 color chip formed from a plurality of unit color chips,  
9 color chip sensing data obtained by sensing the color  
10 chip with an input device under the observation  
11 illumination light, spectral sensitivity data of said  
12 input device, and color matching function data;  
13 means for calculating an output color image signal  
14 based on the calculated tristimulus values; and  
15 means for outputting a color image based on the  
16 output color image signal.

1 Claim 2 (original): A system according to claim 1,  
2 wherein said tristimulus value calculation means  
3 multiplies the color chip sensing data by a matrix  
4 obtained from a relationship between a product of the  
5 spectral reflectance of the object and color matching  
6 functions and a product of the spectral reflectance data

7 of the color chip and the spectral sensitivity of said  
8 input device, thereby calculating the tristimulus values.

1 Claim 3 (original): A system according to claim 1,  
2 wherein said tristimulus value calculation means obtains  
3 the tristimulus values as a linear sum of basis function  
4 tristimulus values obtained by multiplying the color chip  
5 sensing data by a matrix obtained from a relationship  
6 between a product of a plurality of basis functions of  
7 the spectral reflectance of the object and color matching  
8 functions and a product of the spectral reflectance data  
9 of the color chip and the spectral sensitivity of said  
10 input device.

1 Claim 4 (currently amended): A system according to claim  
2 1, wherein ~~each of said first image sensing means and~~  
3 ~~said second image sensing means~~ said input device  
4 comprises a digital camera.

1 Claim 5 (original): A system according to claim 1,  
2 wherein the color chip has a plurality of unit color  
3 chips having independent spectral reflectances and  
4 arrayed in a matrix.

1 Claim 6 (original): A system according to claim 1,  
2 wherein said means for outputting the color image  
3 comprises a monitor, and said means for outputting the

4 output color image calculates the output color image on  
5 the basis of characteristics of said monitor.

1 Claim 7 (original): A color reproduction system  
2 comprising:

3 first image sensing means for sensing an object  
4 under sensing illumination light;

5 means for calculating a spectral reflectance of  
6 image data of the object sensed by said first image  
7 sensing means on the basis of spectral sensitivity data  
8 of said first image sensing means, spectrum data of  
9 the sensing illumination light, statistic data of  
10 a spectral reflectance of the object, and outputting  
11 spectral reflectance image data corresponding to the  
12 calculated spectral reflectance;

13 second image sensing means for sensing a color chip  
14 under observation illumination light;

15 means for calculating tristimulus values of the  
16 object under the observation illumination light on the  
17 basis of the output spectral reflectance image data,  
18 color chip image data of the color chip sensed by said  
19 second image sensing means, spectral sensitivity data of  
20 said second image sensing means, color chip spectral  
21 reflectance data representing a spectral reflectance  
22 distribution of the color chip, and color matching  
23 function data;

24 means for calculating an output color image signal  
25 on the basis of the calculated tristimulus values; and  
26 means for outputting a color image on the basis of  
27 the output color image signal.

1 Claim 8 (original): A system according to claim 7,  
2 wherein each of said first image sensing means and said  
3 second image sensing means comprises a digital camera.

1 Claim 9 (original): A system according to claim 7,  
2 wherein the color chip has a plurality of unit color  
3 chips having independent spectral reflectances and  
4 arrayed in a matrix.

1 Claim 10 (original): A system according to claim 7,  
2 wherein said means for outputting the color image  
3 comprises a monitor, and said means for outputting the  
4 output color image calculates the output color image on  
5 the basis of characteristics of said monitor.

1 Claim 11 (original): A color reproduction system  
2 comprising:  
3 first image sensing means for sensing an object  
4 under sensing illumination light;  
5 means for outputting expansion coefficient data  
6 which is represented as a linear sum of basis functions  
7 of a spectral reflectance of the object on the basis of

8 spectral sensitivity data of said first image sensing  
9 means, spectrum data of the sensing illumination light  
10 and statistic data of a spectral reflectance of the  
11 object;  
12 second image sensing means for sensing a color chip  
13 under observation illumination light;  
14 means for calculating tristimulus values of the  
15 object under the observation illumination light on the  
16 basis of the output expansion coefficient data, color  
17 chip image data of the color chip sensed by said second  
18 image sensing means, spectral sensitivity data of said  
19 second image sensing means, color chip spectral  
20 reflectance data representing a spectral reflectance  
21 distribution of the color chip, and color matching  
22 function data;  
23 means for calculating an output color image signal  
24 on the basis of the calculated tristimulus values; and  
25 means for outputting a color image on the basis of  
26 the output color image signal.

1 Claim 12 (original): A system according to claim 11,  
2 wherein each of said first image sensing means and said  
3 second image sensing means comprises a digital camera.

1 Claim 13 (original): A system according to claim 11,  
2 wherein the color chip has a plurality of unit color

3 chips having independent spectral reflectances and  
4 arrayed in a matrix.

1 Claim 14 (original): A system according to claim 11,  
2 wherein said means for outputting the color image  
3 comprises a monitor, and said means for outputting the  
4 output color image calculates the output color image on  
5 the basis of characteristics of said monitor.